Report of the Africa RISING West Africa Review and Planning Meeting Tamale, Ghana 23–25 October 2012

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The Africa Research In Sustainable Intensification for the Next Generation (Africa RISING) program comprises three research-for-development projects supported by the United States Agency for International Development as part of the US Government's Feed the Future (FtF) initiative.

Through action research and development partnerships, Africa RISING will create opportunities for smallholder farm households to move out of hunger and poverty through sustainably intensified farming systems that improve food, nutrition, and income security, particularly for women and children, and conserve or enhance the natural resource base.

The three projects are led by the International Institute of Tropical Agriculture (in West Africa and East and Southern Africa) and the International Livestock Research Institute (in the Ethiopian Highlands). The International Food Policy Research Institute leads an associated project on monitoring, evaluation, and impact assessment.

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Acronyms

AfSIS	Africa Soil information Service
ARI	Animal Research Institute (Tamale, Ghana)
AVRDC	World Vegetable Center
BMGF	Bill & Melinda Gates Foundation
CIAT	International Center for Tropical Agriculture
CIMMYT	International Center for Wheat and Maize Improvement
CRP	CGIAR research program
CSIR	Council for Scientific and Industrial Research (Ghana)
DADO	district agricultural development officer
DALY	disability adjusted life years
DfID	Department for International Development
ESA	East and Southern Africa
FtF	Feed the Future
ICRAF	World Agroforestry Centre
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics (Mali)
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute (Ethiopia)
IITA	International Institute of Tropical Agriculture (Nigeria)
ILRI	International Livestock Research Institute
IPA	Innovations for Poverty Alleviation
IWMI	International Water Management Institute
KNUST	Kwame Nkrumah University of Science and Technology (Kumasi, Ghana)
M&E	monitoring and evaluation
MoFA	Ministry of Food and Agriculture (Ghana)
NARS	national agricultural research system(s)
NGO(s)	nongovernmental organization(s)
NRM	natural resource management
Q&A	questions and answers
R4D	research for development
RELC	Research-Extension Linkage Committee (Ghana)
RCT	randomized control trial
RO	research output
SARI	Savannah Agricultural Research Institute (Tamale, Ghana)
SeedPAG	Seed Producers Association of Ghana
SI	sustainable intensification
SRI	Soil Research Institute (Kumasi, Ghana)
UDS	University for Development Studies (Tamale, Ghana)
USAID	United States Agency for International Development
WA	West Africa
WIUC	Wisconsin International University College (Accra, Ghana)

Summary

From 23 to 25 October 2012, the International Institute of Tropical Agriculture (IITA) organized a review and planning meeting for the West Africa Project of the Africa RISING Program with the objective of utilizing and building upon the results of early-win project activities, to produce a work plan, to form research teams, and to garner feedback about the plans formulated from partners.

On the first day of the meeting, participants listened to reports on early-win projects that took place in the first year of the program. They drew lessons out of these projects around partnerships, crosscutting issues, market access, integrating crop-livestock-tree systems, and a few other areas. They listened to the key constraints enunciated by various leaders of the programs drawn from CSRI-SARI, UDS, CSRI-ARI, ICRISAT, AVRDC, IFPRI, ILRI, among others.

On the second day, participants formed multidisciplinary groups to develop research questions addressing these constraints. They finally reformed as groups working on interactions between crop, soil/water and livestock to formulate research hypotheses and activities that could serve as a basis for the program of action for year 2.

On the third day, a review team was organized to listen to presentations from the five work groups, and to comment on them. Plans presented to the house were not sufficiently detailed and only listed a number of options for research and development, and from which research teams would be developed. These plans will serve as the basis for further elaboration of research action plans, and developed into concept notes. Working teams would then develop these plans into more tangible activities to meet the start of the planting season in Ghana and Mali, by early April.

This report features the main discussion points, decisions, next steps, and links to all presentations and documents shared during the meeting.

The meeting was attended by 63 participants drawn from Ghana, Mali, and other CGIAR centers, and ended on a high note of enthusiasm from participants and organizers.

Introduction and purpose

The International Institute of Tropical Agriculture (IITA) organized a review and planning meeting for the West Africa Project of the Africa RISING Program on 23–25 October 2012.

The meeting aimed to:

- Capitalize on the 2012 fast-track work plan to inform planning for the next year(s).
- Develop an action plan for the next year (October 2012–September 2013).
- Form research teams.

The meeting gathered all research teams from the inception period. The meeting was facilitated by Ewen Le Borgne from the International Livestock Research Institute (ILRI).

Day 1: Tuesday, 23 October 2012

Setting the stage

The meeting opened at 0845 with two principal welcome addresses delivered by Stephen Nutsugah, Director, CSRI-SARI, and Irmgard Hoeschle-Zeledon, Coordinator, IITA-Africa RISING West Africa and East and Southern Africa.

The Director of the Savannah Agricultural Research Institute (SARI) of the Ghana Council for Scientific and Industrial Research (CSIR), Stephen Nutsugah, as host, delivered the welcome address to meeting participants. He said that CSIR has been a major player in the NARS in Ghana, and that SARI has been playing a significant role in the Africa RISING project. He explained that the concept of integrated farming systems enhances the socioeconomic environment in which farmer decisions are made and where collaboration between farmers and other stakeholders are expanded and enhanced. He said since the inception meeting in Tamale in January 2012, SARI has been collaborating on a draft work plan which was finalized in September, involving several stakeholder meetings.

He hoped that this meeting would allow SARI to focus on key areas around markets and farming systems, with partnership building as a key element. He expressed SARI's gratitude to the United States Agency for International Development (USAID) for the support via IITA to establish such partnerships, bearing in mind key food security issues in Northern Ghana. He wished participants a successful review and planning meeting for Year 2.

After warmly welcoming the participants, the Project Coordinator stated that after the Inception meeting in January 2012, the Project Teams had been very busy, developing various strategic documents and frameworks, details of which would be presented in the course of the meeting.

She stated: "It is my wish that at the end of this meeting we reach a number of decisions and agreements, with a clear picture of the research agenda for the next four years, and a work plan for year 2". She ended the address by expressing her gratitude for all the engagement and enthusiasm demonstrated by Africa RISING implementation team despite the initial uncertainties. She thanked USAID for their patience in creating "sufficient space and time" that allowed the Project to think about what to do, where, and how. She mentioned that it hadn't been easy for Eric Witte and Jerry Glover to justify the year of orientation but they had been real advocates of the Africa RISING approach.

Why we are here

After introducing participants to one another the Facilitator, Ewen Le Borgne, introduced the Program. He gave a brief outline of processes for each meeting day.
Irmgard Hoeschle-Zeledon, the Africa RISING Coordinator, presented an overview of the project in the region and what has happened during the first year. She outlined the key events and activities as presented below.

In October 2011, a brainstorming meeting was held to discuss agreements on countries and regions to be covered by the project. For Ghana, the selected regions were Upper East Region, Upper West Region, and Northern Region. For Mali, the Sikasso region was selected.

In November and December 2011, the key activity was the development of a concept note, where three farming systems were selected and discussed. In January 2012, an Inception Meeting was organized in Tamale, Ghana.

She indicated that the first disbursement of funds was made in February 2012. In March 2012, a stakeholder meeting was organized. She presented the next steps after the planning stages in Ghana as community analysis, drawing community action plans, and district stratification and characterization (rainfall, elevation, population, market access) by IFPRI.
In June 2012, a joint workplan was developed and submitted to USAID, and over the one-year period to date, there have been continuous activities in developing strategic documents.

She said that the Program Research Framework Task Force was initiated by Jerry Glover of USAID, and coordinated by the International Center for Wheat and Maize Improvement (CIMMYT). A meeting was organized and led by IITA in July 2012 at Ibadan, Nigeria, to advance and complete the research framework.

Work on the Monitoring and Evaluation (M&E) framework was led by the International Food Policy Research Institute (IFPRI), culminating in a meeting in Addis Ababa in September 2012. The actual status of progress on the Research Framework and M&E Plan will be presented in the course of the meeting.

The Project Coordinator then presented the Africa RISING Program Management Structure (PMS), with the Projects Steering Committees (PSC). Re the Terms of Reference of the Africa RISING West Africa Steering Committee, the Project Coordinator stated that the Steering Committee is tasked to review and make suggestions to the Project Coordinator on semi-annual technical progress reports to USAID.

The Project Coordinator ended with news on the visit of some members of the US Congress to inspect bilateral and multilateral food security programs in northern Ghana, and that the visiting team was pleased with progress of the project and what they saw and learned.

Looking at results from Ghana and Mali

Maize-based systems in Ghana

Asamoah Larbi, Ghana coordinator, made a presentation on Maize-based systems. He expressed gratitude to the partners of Africa RISING in Ghana including IITA, SARI, ARI, UDS, ILRI, MoFA, SeedPAG, IWMI, KNUST, WIUC, and SRI.

He indicated that the maize/legume system component is implemented by several CGIAR centers (IMWI, ILRI, IITA) in partnership with AVRDC, SARI, MoFA, NGOs, farmers, input dealers, and USAID-funded and other projects. He said that after the Stakeholders' Workshop in March 2012, the community analysis was conducted in 60 communities.

He gave a detailed presentation on crop production constraints, and followed that up with a presentation on livestock production constraints. He presented the status of on-station and on-farm trials for crops and livestock, as well as capacity building activities. During the review period, several short courses were conducted.

Rice-based systems in Ghana

A presentation on the status of activities in the rice-based systems was made by O. Ajayi, highlighting and giving details on work done by AfricaRice and CSIR-SARI.

Ajayi opened his presentation with an expression of gratitude to all partners for their commitment and support in realization of the achievements made so far. AfricaRice is responsible for overall project coordination and backstopping. CSIR-SARI is responsible for in-country project

implementation and coordination. The World Vegetable Center (AVRDC) is responsible for introduction, evaluation, and promotion of high value fruit and vegetables.
He indicated that in-country partnerships include 23 partners, two universities, five research institutes, two State Ministries (Health and Agriculture), NGOs, the private sector, and professional associations (including farmers, processors, seed growers, traders, etc.). Some important definitions were presented to guide participants and scientists in arriving at a common understanding of terms for better communication.

He explained the concept of a rice-sector development hub and stated that multi-stakeholder platforms will operationalize the concept, and act as a platform for introducing, validating, and monitoring appropriate improved rice technologies and interventions.

For the baseline survey, a protocol/workplan was developed, and modular questionnaires formulated. The first round of data collection commenced in September, and data collection was completed in 13 communities and for 27 households (outstanding 27 communities and 373 households).

For seed production, 15 farmers and four extension staff were trained in the Navrongo Hub but it was too late to start training in the Savelugu Hub. Foundation seed was provided to the trained 15 farmers (0.4 ha each = 6 ha total). He made presentations on yield gap analysis, diagnostic survey, and the achievements made so far, with an elaboration of outstanding activities. The total number of stakeholders and their members (male and female) are 47 actors and 914 members, composed of 821 men and 93 women.

Sorghum/Millet-based systems in Mali

Eva Weltzien of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)-Mali made a presentation on Sorghum-based Farming Systems in Mali. She gave an outline of themes and respective contributors to the various thematic activities.

Stakeholder meetings in the two target districts identified opportunities for sustainable intensification (SI) and quick-win options and implementation capacity available in Mali. In the two project districts of Bougouni and Koutiala, intensified livestock production and increased crop diversity were carried out.

Activities undertaken and achievements during the period include community surveys, and a diagnostic survey of organizational and institutional issues, principal sources of household income in Koutiala and Bougouni, as well as sources of income and types of off-farm activities.

She presented details on moving toward sustainable increases in on-farm productivity in terms of food crop diversity, which included testing fodder crops and trees in cereal-based systems, quantifying total biomass in selected farms, and options for modeling ("FIELD'"crop model), among others. She also presented details on training facilitators for trial implementation, and in diversifying seed enterprise and tree nursery options.

On developing and testing options for introducing communication tools for preventing child malnutrition into the community health care system, she indicated that nutrition activities were based on the "First 1000 Days of Life (FTDL)" concept. On dietary diversity and nutritional performance of existing dietary options, she reported that six health centers were supplied with seeds for improved availability and access. These include cereals (sorghum, millet, maize), legumes (cowpea, soybean), and vegetables/trees (amaranth, hibiscus [sorrel], moringa, baobab). In terms of food safety, aflatoxin management activities in groundnuts are in progress to improve food safety and quality.

Vegetables in Ghana and Mali

Abdou Tenkouano of AVRDC (The World Vegetable Center) made a presentation on the theme "Vegetables and associated best management practices in cereal-based crop production systems to improve income and diets of rural and urban households in northern Ghana and southern Mali". He said that AVRDC is under contract with IITA with functional oversight by IITA for maize-based systems, AfricaRice for rice-based systems, and ICRISAT for sorghum/millet-based systems. He indicated that AVRDC works in northern Ghana and southern Mali. In northern Ghana, AVRDC works through CSIR-SARI and UDS with detailed implementation protocols and regular monitoring visits, whereas in southern Mali, the project implementation unit is coordinated by ICRISAT with support from non-project staff posted in Sikasso and NGOs. He outlined the various outputs and respective activities undertaken to achieve them.

Reports on key outcomes, outputs, and activities

Maize/Rice-Legume systems in Ghana

Tenkouano reported that survey protocols were developed by the University for Development Studies (UDS) with AVRDC support, and that the survey began in mid-July 2012. Data analysis is underway, and a preliminary report is already available. Maize-vegetable farmers were found to make an average GHC 122 per annum from vegetables (about 21.3% of their total revenue).

CSIR-SARI established participatory evaluation and seed bulking plots at Nyankpala and Manga (Navrongo) with more than 80 lines of 10 species received from AVRDC in early June; the results are expected to be available in 2-3 months. Site selection for testing in farmers' fields at locations chosen by IITA (maize) and AfricaRice (rice) has been completed (12 communities with both maize and rice systems).

Participatory appraisals on diets were carried out in conjunction with Activity 1.1.10. Data processing is under way, and a preliminary report is available. Promotional food preparations of Nightshade and Roselle were carried out at Nyankpala. The percentage of households consuming selected vegetables daily or weekly was studied.

Sorghum-millet systems in Mali

The survey protocols developed for northern Ghana have been adapted to the southern Mali context, and consultancy arrangements are in progress for the surveys to be carried out in October 2012.

Planning meetings were held to estimate seed needs for on-farm testing to plan seed bulking in Bougouni on 31 May 2012, and in Koutiala on 4–6 June 2012. Seeds of one variety each of amaranth, African eggplant, hot pepper, okra, Roselle, sweet pepper, and tomato are under production at Samanko.

The survey protocols were developed. Consultancy arrangements have been made for the surveys to be carried out in October 2012. The Project nutritionist returned to Bamako after precautionary evacuation from mid-April to early September and has resumed work again.
The USAID Mali (ICRISAT) Project on "Improving Vegetable Production and Consumption in Mali" undertook best practice demonstration, and dissemination hubs (new varieties, crop management practices, and water delivery systems) were undertaken in the Sikasso Region.

What we learned from quick-win activities

Sustainable intensification of key farming systems in Sahelian West Africa

Frank Avornyo made a presentation on "Sustainable Intensification of Key Farming Systems in the Sudano-Sahelian Zone of West Africa". He commenced by mentioning that start-up activities carried out included team selection, and planning for a regional meeting, training course, etc. during which some areas for protocol development were identified.

On-farm technologies tested/generated were focused on false yam for guinea fowls (eight feed formulations), and false yam for pigs (nine feed formulations, out of which two were promising). On-farm testing included feed supplementation under wet season management of small ruminants with one promising feed formulation, and spent grains from sorghum malt for guinea fowl (cheaper feed formulation).

On "best-bet technologies" in milk hygiene and processing, he mentioned that appropriate pasteurization equipment was developed and tested, and posters on milk hygiene, milk platform, salt *wagashi*, good wagashi, *queso blanco* cheese, and yoghurt were also prepared.

On capacity building, training sessions were organized for implementers, farmers, and students. These sessions included training on improvement in understanding of crop-livestock systems, and participants benefited from biometry training, sensitization on protocol, and demonstration on feed formulation, data collection, crop-livestock systems, and protocols on management.

On dissemination, he reported that farmer field visits were conducted for 75 men and 42 women. A feed millers' visit was organized to project sites, as well as community experience-sharing and learning visits organized for 120 participants, and posters distributed to 3000 participants.

Challenges encountered included the harmonization gaps of the protocols due to limited information on sociocultural settings, time and area to cover, managing in the absence of a project vehicle, support needed by farmers for technology/innovation uptake, and how to sustain the process/interventions—farmers are wondering if project staff will come back.
On lessons learned, he indicated that the team work greatly contributed to the achievements. Regional teams required monitoring due to peculiarity of data collection without which the project might have failed. There is need for long-term relationship, commitment, and trust building. Wet season intervention is justified particularly for restrained animals. Land is an issue for intensification in the Upper East Region, where crops are failing; diversifying into livestock production for integration with crops can improve livelihoods.

On opportunities, he mentioned that present opportunities include the following:

- Community members are more receptive and are organizing themselves into groups.
- Some feed formulations were promising and this provided an opportunity for scaling up (development of feed market).
- New partnerships formed present an opportunity for future collaboration (internal and external partners).
- Presence of milk groups is an opportunity for the development of the dairy sector in northern Ghana.
- Availability of synthesized knowledge for uptake—proceedings, reports, etc.
- Working as a consortium for future projects.

Who may we partner with?

Innovations for Poverty Action (IPA)

Elizabeth Schultz, of Innovations for Poverty Action (IPA) made a presentation on "Evaluating the Impact of Agricultural Development Programs". She made an introduction to IPA and its key areas of research intervention and methods. IPA was established in Ghana in 2007 to measure the effects of poverty alleviation programs, using the randomized controlled trial (RCT) method of rigorous evaluation. IPA works in the areas of agriculture, health, education, microfinance, water and sanitation, and governance, and openly shares findings about what does and doesn't work with policymakers, donors, practitioners, researchers, and other critical stakeholders.

She lamented that surprisingly little hard evidence exists on what works, when more can be done with a given budget when there is better evidence. IPA therefore seeks research into programs that work best, and how to scale up what works.

She then presented some research activities of IPA. One activity, "Examining Underinvestment in Agriculture" was conducted from 2008 to 2012, with a research design that sought to examine underinvestment in agriculture by farmers to understand why smallholders underinvest in farms. It was based on the hypothesis that underinvestment in agriculture is driven by capital constraints and risk aversion. The treatments used were (1) unconditional cash grants, and (2) rainfall index insurance.

For the way forward, she mentioned that there are partnership opportunities, where IPA brings to the partnership, a number of strengths including program evaluation study design, survey data collection, M&E tools, paper and electronic forms, and data quality protocols. She listed what IPA looks for in partnerships in integrating agricultural research findings into best practices resources, and in identifying context-relevant technology input packages to test.

Africa Soil information Service (AfSIS)

Jerome E. Tondoh, of CIAT-Mali made a presentation on the Africa Soil Information Service (AfSIS) seeking eco-efficient agriculture for the poor.

He presented a section on AfSIS and stated that AfSIS tackles the Africa soil health crisis by recognizing that healthy soils deliver key ecosystem services, and that there are barriers to the adoption of innovations on a larger scale (lack of reliable up-to-date information about soil health), and the potential solution to establish a dynamic and modern soil information system. The five components of AfSIS are Global frameworks, Digital soil map consortium, Cyber-infrastructure, Digital soil maps, Evidence-based soil management recommendations, as well as end-users, dissemination, training, and capacity building.

Baseline land resources: 60 sites from 21 countries, where soil analysis was performed with infrared spectroscopy techniques on 18 million km^2 in sub-Saharan Africa. AfSIS has 18 sentinel sites across seven countries in West and Central Africa. Land Degradation Surveillance Framework (LDSF) has been established with a sentinel site (100 km^2), in 16 clusters, of 10 plots each, with 4 subplots, resulting in 540 subplots.

He then presented a brief on AfSIS' targeted areas and evidence-based soil management recommendations. He explained that Integrated Soil Fertility Management (ISFM) seeks innovations to address the issue of sustainable soil fertility management and colocation of trial sites with AfSIS sentinel sites.

On partnership opportunities, he explained that AfSIS will conduct more baseline surveys of soil health/land resources (soil and vegetation) in action sites to map soil degradation hotspots and provide recommendations for specific interventions.

Planning for Years 2-5

Communication

Ewen Le Borgne, of the Africa RISING Global Communication Team made a presentation on the Activities and Communication Tools developed by Africa RISING Knowledge Sharing and Communication (KS&C) Team. He stated that the key objectives of the KS&C in Africa RISING are to capture, publish, and disseminate project products and outputs, to improve the project's effectiveness by engaging with wider audiences and enriching learning, interaction and exchange, to translate outputs into outcomes, getting knowledge into use, and to improve internal communication, by linking and connecting teams.

He then presented some present and future communication/knowledge sharing tools to be developed or established so far. These tools include Africa RISING wiki site, the calendar, the collection of outputs on CG Space, Africa RISING website including where to share news, updates and announcements, Slideshare, FlickR, YouTube, and Yammer accounts. He encouraged Africa RISING teams and partners to sign up, now, for news alerts and publication alerts by email.

He said that the members of the Communications and Knowledge Sharing Team are located at different levels, viz, a team at program level, and for each of the mega sites. He however stressed that everyone within Africa RISING is part of the effort of the team.

He provided some useful links:

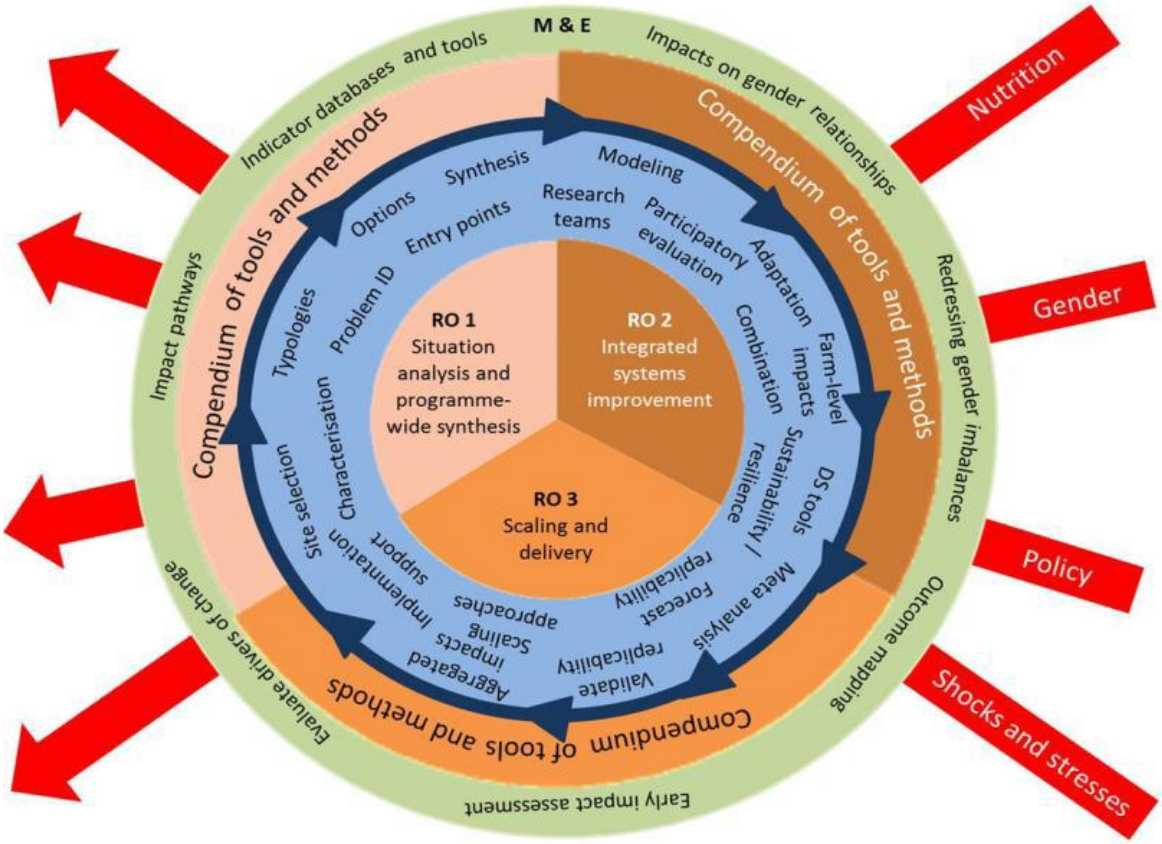
- List of tools: http://africa-rising.wikispaces.com/comms_tools
- Our wiki: http://africa-rising.wikispaces.com/
- Our calendar: http://goo.gl/2m56L or http://africa-rising.wikispaces.com/Calendar
- Our outputs on CG Space: http://cgspace.cgiar.org/handle/10568/16498
- Our presentations on Slideshare: http://www.slideshare.net/africa-rising
- Our pictures on FlickR: http://www.flickr.com/photos/africa-rising
- Our website: http://www.africa-rising.net
- Soon, YouTube and Yammer web domains will be established

He ended by stressing again the need for Africa RISING teams and partners to sign up, now, for news alerts and publication alerts by email.

Research Framework

Joseph Rusike made a presentation on the Africa RISING Research Framework. He stated that the context within which the Africa RISING Research Framework works is sustainable intensification production. The Research Framework seeks to provide pathways out of hunger and poverty for small-scale families through sustainably intensified farming systems, and to ensure that research contributes to development impacts of Feed the Future (FtF).

On achievement of research outcomes, he stated that these include integrated innovations, increased production and/or improved productivity in a sustainable manner, and that aggregated impact contributes to ecosystem stability, as well as dissemination of integrated innovations for SI leads to impacts beyond sites.



On development outcomes, he mentioned the achievements as wider adoption of innovations identified and tested to enhance livelihoods, and development community initiatives on innovations by Africa RISING.

After the introductory presentation, he presented detailed outputs of situation analysis, integrated systems, scaling, and monitoring & evaluation methods. He then presented details of methods applied in randomized experiments, platforms as well as methods for roll-out over time.

M&E Framework

Naomi Sankana from IFPRI presented the M&E Framework for the Africa RISING Program.

Her opening presentation covered Africa RISING objectives, activities, and expected results, monitoring, evaluation, M&E objectives, principles, indicators, methods, and roles and responsibilities.

She then highlighted Africa RISING outputs on program/project site identification to include FtF indicators/reports by research sites; country/national level; project sites; program performance variables (modeling & validation); and whole farm productivity.

She stated that the Africa RISING M&E approach seeks to identify action research sites in priority domains that satisfy selection criteria. Site data include climate, soils, market access, community/household survey data, experimental data, model input data, whole-farm models, innovation inventory, standard metadata, as well as user interfaces. She then made a presentation on various intermediate results and indicators provided by USAID.

Action Research Sites in Ghana

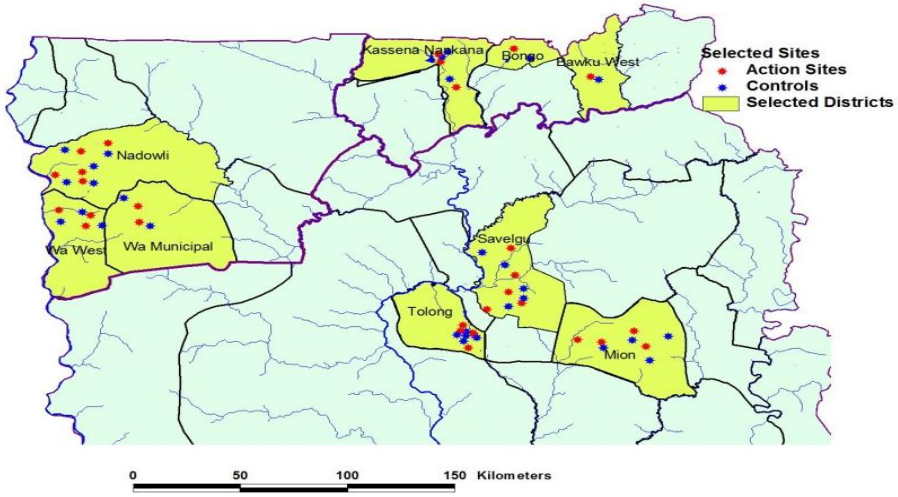
Asamoah Larbi made a presentation on Site Selection for Africa RISING in northern Ghana. He indicated that there are three levels of sites: Program Areas called mega-sites (Ghana and Mali),

Regional sites (Northern, Upper East, and Upper West Regions in Ghana), and District sites. He explained that based on this, action site communities were selected.

Three main project areas were defined following discussion between donors and implementing agencies. The potential extrapolation zone of the Ghana/Mali project area covers large areas of West Africa.

The area is stratified using the following data: Agricultural suitability (rainfall and elevation), Population density, Livestock density, Cropping system, and Market access.

The map below presents the various regional and district sites selected for the Project.



District selection was based on market access factors such as population density, elevation, rainfall, and market access.

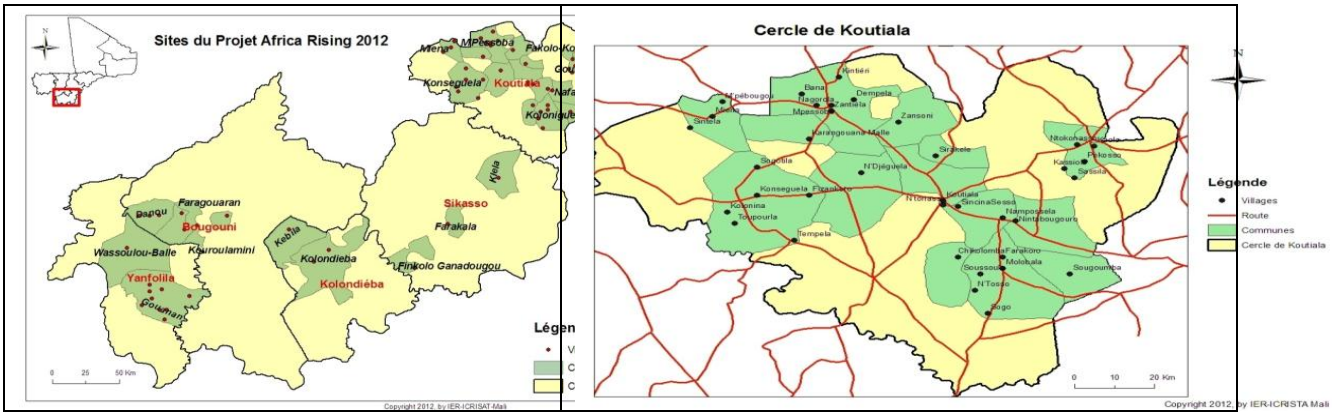
He indicated that the initial selected districts in the Northern Region (Savelugu/Nanton, Tolon/Kundungu, and Yendi districts) were later changed when it was discovered that a new district (Mion district) had been carved out of Yendi district. The new list now includes Savelugu, Tolon, Mion districts.

Site Selection for Africa RISING in Southern Mali

Abdou Fall of ILRI made a presentation under Sustainable Intensification of Cereal-Based Farming Systems in the Sudano-Sahelian Zone (Africa RISING - Mali 2012) on "Moving toward sustainable increases in on-farm productivity: via improved fodder production". He stated that the Project works in two districts (Bougouni and Koutiala) in 69 villages and 28 communities. He presented progress on work done so far in the project sites and with partners in Mali, where Feed the Future works in the Sikasso Region.

The main work involved contrasting land use issues/opportunities (soil fertility, forest cover, transhumance), identifying nodes of existing research-development partnerships and functioning cooperatives and associations with crop/livestock production of marketing objectives.

He presented maps on sites selected for the research, and these are presented below:



He said that some challenges encountered are related to the situation where the current political crisis in Mali makes partnerships with state institutions not fundable. He indicated that subsidized fertilizer arrives late, and in low quantities, and that the presence of scientists is highly "volatile" since the political crisis in Mali.

Marketplace Discussion

Open discussions were led by the facilitator Ewen Le Borgne, during which participants posed questions, responded to queries, and made comments on the various presentations on the building blocks.

Day 2: Wednesday, 24 October

Developing a Demand-driven Research Agenda for Years 2-5

Challenges in Mali

Some challenges in smallholder cereal-legume-livestock systems in Mali were presented by A. Ayatunde and Eva Weltzien. The Africa RISING Project site in Mali—the Sikasso Region—which is the food basket of Mali, produces millet and sorghum (37% of national production), maize (63%), and cotton (95% of national production: Koutiala is the cotton capital of Mali).

Some key challenges include malnutrition of children under 5 years, and inadequate household labor for farming because young people are highly mobile with a tendency to move to urban centers (rural–urban exodus). Other challenges include value addition of agricultural products particularly cereals, vulnerability to market shocks due to heavy dependence on revenue from cotton, and diversification to reduce dependence on cotton.

Key challenges in livestock production include bridging the feed gap through food-feed crops, fodder production including shrubs, crop residue management, and strategic supplementation, as well as maintaining traction animals in good condition, and access to veterinary services, and improved management while upgrading local breeds.

Challenges in Ghana

S. Buah (CSIR-SARI) presented key challenges in smallholder cereal-legume-livestock systems in the Guinea–Savanna of Ghana. He said that major challenges to agricultural production in the Guinea–Savanna of Ghana include: poor soil fertility, pests and diseases of crops and livestock, parasitic weeds such as *Striga*, drought, competition between crops and livestock for resources, weak institutional mechanisms, traditional farming systems breaking down under human and livestock population pressure, current fallow periods not being long enough to replace exported nutrients, very low soil organic matter, nitrogen (N) as the most limiting nutrient, and phosphorus (P) as the second most limiting nutrient.

What defines our work?

Research Planning Boundaries and Principles

The Africa RISING Coordinator, Irmgard Hoeschle-Zeledon, made a presentation on Year 2 planning boundaries and principles. She presented details on planning boundaries, program research objectives, and program developmental objectives, as well as program outcomes on research and program outcomes on development and research outputs. The Project Coordinator explained the content and features of the research outputs and gave details of each research output. Regarding issues that are important to USAID, she indicated that the focus is not only on biophysical issues, but also includes nutrition, gender, natural resource management (NRM), and policies for food security.

Niche-Integrated Approach

Asamoah Larbi, IITA Africa RISING Ghana Representative made a brief presentation on the Niche-Integrated Research Approach to be applied by Africa RISING in planning, guiding, and delivering on its research agenda. The presentation was diagrammatic and was self-explanatory. Some questions were asked for clarification and these were answered with further explanations.

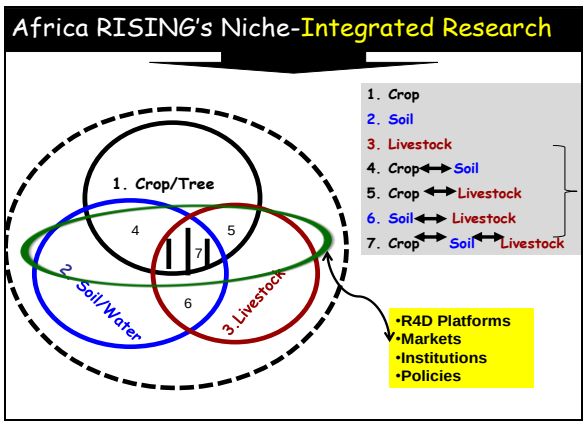


Figure 3: Integrated Research Model and interlinkages between system

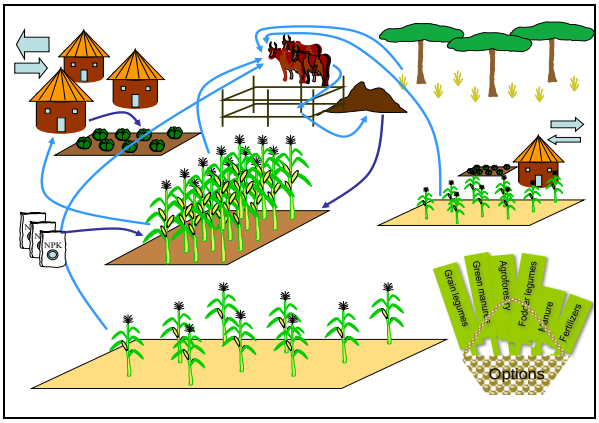


Figure 4: Interlinkages between integrated systems at household level

Group Work: Planning Research Agenda for Years 2–5

The Group work continued in the afternoon session and results were presented in the plenary on the third day of the meeting. Five work groups, based on the previous day's groupings, were tasked to undertake discussions on three research outputs. Group 1 (Research Output 1: Situation Analysis), Group 2 (Research Output 2: Improvement of Maize-Legume-Vegetable-Livestock systems), Group 3 (Research Output 2: Improvement of Rice-Legume-Vegetable-Livestock systems), Group 4 (Research Output 2: Improvement of Sorghum-Legume-Vegetable-Livestock systems), and Group 5 (Research Output 3: Scaling Out). The five groups spent the mid-morning session until the end of the day on group discussions.

Day 3: Thursday, 25 October 2012

Presentation on Research Outputs and Review by Panel

A panel composed of N. Karbo, A. Larbi, C. Tenkouano, I. Hoeschle-Zeledon, O. Ajayi, E. Weltzien, and A. Ayantunde listened to various group presentations and provided comments and observations. Inputs from participants were also received and clarifications made on comments/issues raised. The following is a synopsis of the presentation and clarifications during this session. Groups/Teams were asked to limit their presentations to only the issues discussed.

Research Output 1: Situation Analysis

The presentation of A. Ayantunde on Mali focused on current challenges encountered (socioeconomic and biophysical challenges). Socioeconomic challenges include the predominance of a young population, child labor, crop farming and livestock as main sources of household income, value addition of agricultural products, vulnerability to market shocks (need to reduce dependence on revenue from cotton), as well as access to agricultural inputs for crops other than cotton and access to financial services, strengthening farmer associations and private input suppliers, and seed systems including planting materials.

Biophysical challenges are related major constraints to crop production, e.g., insufficient agricultural inputs, unfavorable climatic conditions, soil degradation, postharvest as well as livestock constraints, bridging the feed gap through food-feed crops, fodder production, crop residue management, strategic supplementation, maintaining traction animals in good condition, access to veterinary services and improved management, and upgrading local breeds.

Research Output 2: Improvement of Integrated Systems

Maize-legume-vegetable-livestock systems

Instead of tackling soil fertility management and soil conservation, the group worked on integrated soil/water management. The group also worked on the debate surrounding nutrition. The issue is clear: farmers will sell high-quality inputs to the market and eat low-quality produce. The way food is prepared is also important. It would be good to undertake a baseline study highlighting the nutritional status of various foodstuffs. Within the target sites, the Project could introduce fruit trees and work on eating patterns looking at traditional sociocultural constraints. The group also worked on a conceptual integration framework and looked at some crosscutting interventions, e.g., value chain development, land and water right systems, and institutional arrangements.

Rice-legume-vegetable-livestock systems

Looking at research areas, this group identified the need to work on biomass for livestock. Another research area is work on drought-resilient crop varieties and *Striga*-resilient varieties. There is need to investigate this further. In terms of nutrition, there is need for further research. Recommended fertilizer doses and rates will have a direct impact on crops. The group also discussed how milk processing could be improved. There is need for simple machinery for land preparation. For rice, the group discussed biomass for compost, and indicated that there is a lot of biomass that goes to waste, and so there is need to work on issues related to fertilizers and nutrient management.

Northern Region (Ghana)

Hypothesis 1 is that a focus on strengthening the value chain will intensify crop-soil-livestock systems through improved technologies and institutional components. Hypothesis 2 is that a focus on improved integration of crop-soil-livestock and water resources and food processing techniques in farming systems will reduce natural resources degradation and enhance food and nutrition security.

Upper West Region (Ghana)

Hypothesis 1 is that a focus on the adoption of biophysical technologies under favorable institutional arrangements will lead to intensification. Hypothesis 2 is that a focus on inventory and evaluation will lead to the promotion of the most efficient existing processing technologies.

Upper East Region (Ghana)

Hypothesis 1 is that effective combinations of component technologies addressing location-specific, priority commodities will improve household productivity and nutrition and enhance income. Hypothesis 2 is that tested and piloted combinations of component technologies or commodities are more likely to be adopted by households (HH) to increase income and improve nutrition.

Sikasso Region (Mali)

The first hypothesis relates to entry points and integration around seeds, land and fodder, and nutrition. For each of them there are institutional/process issues to facilitate adoption. The second hypothesis is on land access and fodder productivity. Main objectives integrate with sequencing and integration, but also scalability, etc. issues. The third hypothesis centers on nutrition, thus: The provision of preparation methods with new products combined with nutrition education (including hygiene) leads to more diverse and complete meals being given to children. When we train people, women use their new knowledge immediately to prepare meals for their children.

Next Steps

The presentation on next steps was made by Asamoah Larbi, focusing on the key points below:

- Concept Notes for each region (research areas, hypotheses, activities, etc.).
- Writing Teams to draft concept notes based on outputs of suggestions and discussions, and circulated for comments (within 2 weeks).
- Revision of Concept Notes: carve out activities and assign budgets.
- Activity protocol to define and design treatments clearly.
- Presenting the finalized document to other donors (e.g., DfID, etc.) by January 2013.

The meeting was brought to a close at 1700, with closing remarks made by the Africa RISING Coordinator (Irmgard-Hoeschle-Zeledon) and Africa RISING systems agronomist (Asamoah Larbi). They both expressed their thanks and appreciation for the full attendance and participation in the meeting by scientists from Ghana, Mali, and other parts of Africa. Since it was not possible to complete the workplan for Year 2, smaller teams will be formed to prepare the workplan based on the discussions during the meeting.